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were identified by me as the spotted-fin shark, *Carcharhinus limbatus*, and this identification has been confirmed by Mr. J. T. Nichols. The largest fish, a female, approximated seven feet, while the smaller, a male, accurately measured, was 6 feet, 4 inches. This appears to be the second record of this species for Long Island, and is therefore worthy of note. About September 1, I examined four other sharks of this same species at Montauk Point, where they had been taken by fishermen some days before.

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GROUND SHARKS. A CORRECTION.

In COPEIA No. 35, p. 70, second paragraph, for "only 7 were males" read "only 8 were males." In the last line of same paragraph after 8' 2" insert 8' 1". Foot of p. 72 for "five of the seven" read "six of the eight." The *C. obscurus*, measurements of which were given on p. 73, was by editorial error omitted from the record on p. 70.—J. T. N.

HABITS AND BEHAVIOR OF THE TEXAS HORNED LIZARD, *Phrynosoma* *cornutum*, Harlan. I.

Unlike the desert species of the genus, these forms are far more active in the middle of the forenoon than during the hottest part of the day, which lasts from about noon to the middle of the afternoon. In the forenoon, *Phrynosomas* are actively feeding, and the collector finds them readily. Their favorite haunt seems to be along the edge of thick vegetation. In such a place, during the feeding hour, they may be seen running rapidly up and down, often passing each other; and snatching with their viscid tongues any insects which emerge into the open. The next most likely spot is in the thick vegetation near some ant road.

While burrowing deeply in the winter, it appears that the Texas horned lizards do not bury themselves at night, as do most of the desert species. Nor do they do so in rainy weather, or during brief cold snaps. At such times they retire into the burrows of rodents or under flat rocks. It is an interesting fact, that, at such times, horned lizards are very abundant under the cross ties of railroad tracks. Often they burrow through into the area between the two rails. Here they emerge and are literally trapped. The rails are usually too high to be climbed over, and the lizards run up and down frantically; occasionally one climbs up on a rail just in time to be crushed by a passing train. Many live for the rest of the summer in this uncomfortable pasture.

In the area of their greatest abundance, horned lizards first appear from their winter burrows about the middle of April. At this time, they are markedly grouped into two sizes; one the full adult size, averaging about 125 mm.; and the other the half sized, averaging about 50 mm, from the hatching of the previous autumn. From this, it seems clear that these lizards do not reach full size until the end of their first year. Some specimens go through an incomplete moulting at the time of their emergence from hibernation; but the most important moult takes place during the first two weeks of July. It is during this time that the blood ejecting habit is most conspicuous. The extraordinary habit of occasionally squirting blood from the eye when attacked has been observed and recorded by a number of writers. Hay supposed that it was a mode of protection during moulting. Bryant, speaking of the California species, says that blood ejecting is just as liable to occur between moults as during moult. Bryant sectioned the eyelids of a blood ejecting specimen, but could find nothing except that the lids were rather swollen and vascular. Several writers have suggested that the blood ejecting is due to the weakening of a portion of the

cornea by some parasite,—perhaps one of the mites which so commonly infest these lizards. The writer has recorded elsewhere (Science Vol. XL, 784-85) a very careful examination which he made of several blood squirting specimens. He found no parasites of any kind, and expressed the belief that the blood ejecting, in this species at least, is intimately connected with moulting. Since this study was published, the writer has found seven more blood ejecting specimens and all were moulting.

In feeding, small insects are clearly preferred; but, sometimes, a venturesome individual will swallow a large grasshopper or even a *snail*. The writer once watched one of these animals eating a large brown May beetle. The beetle lumbered before the eyes of the lizard. The reptile slowly turned his head a little to one side and watched the insect, then raised himself high on his legs and snatched at the insect with his tongue, whipping it against his lips, but not bringing it into his mouth. The lizard hastily jumped back and puffed himself out in the usual warning attitude of these animals. The beetle began to crawl away. The lizard returned to the attack, carefully stalking his prey for a yard or so then rushing on it, seized it in his mouth without using his sticky tongue. After turning it about against the ground, the lizard finally gulped the insect down. The writer expected to see the lizard use its front feet, as the common toad does when handling a large mouthful, but, although the front feet were waved alternately in the air, they were not used.

Mention has been made before of the reaction of these lizards toward various animals. When attacked, the lizard puffs itself out into an almost flat shape, tucks the head down, exposing the horns, and waits for the enemy. The habit of charging on an enemy, which has been mentioned, may be more common than is suspected; although the writer has ob-

served it only once. Specimens seldom attempt to bite the collector.

Bryant discovered that the California species of horned lizards are very subject to a form of hypnotism. The writer has confirmed this on the Texas form, also. Bryant's method is to stroke the animal between the eyes. After three or four gentle strokes, the lizard closes its eyes and becomes very quiet, even losing some of the reflexes. The writer has discovered that if the region over the pineal eye is simply touched a few times with the tip of the finger, that the hypnotic effect can be induced. He has further found that if after a time, when the animal begins to show signs of awakening, if gentle passes are made in the air over the region of the pineal eye, the animal will return to the hypnotic condition. So far, he has not been able to find a definite explanation of this, but it would seem to suggest that the pineal eye in these animals may be more or less functional.

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